

# SRI CHANDRASEKHARENDRA SARASWATHI

## VISWA MAHA VIDYALAYA

(University u/s 3 of the UGC Act 1956)

(Accredited with "B" Grade by NAAC)

ENATHUR, KANCHIPURAM- 631 561. Tamilnadu, India.

### DEPARTMENT OF MECHANICAL ENGINEERING



### "SPECIAL MACHINES LAB"

Academic Year 2015-2016

Name : \_\_\_\_\_

Register No. : \_\_\_\_\_

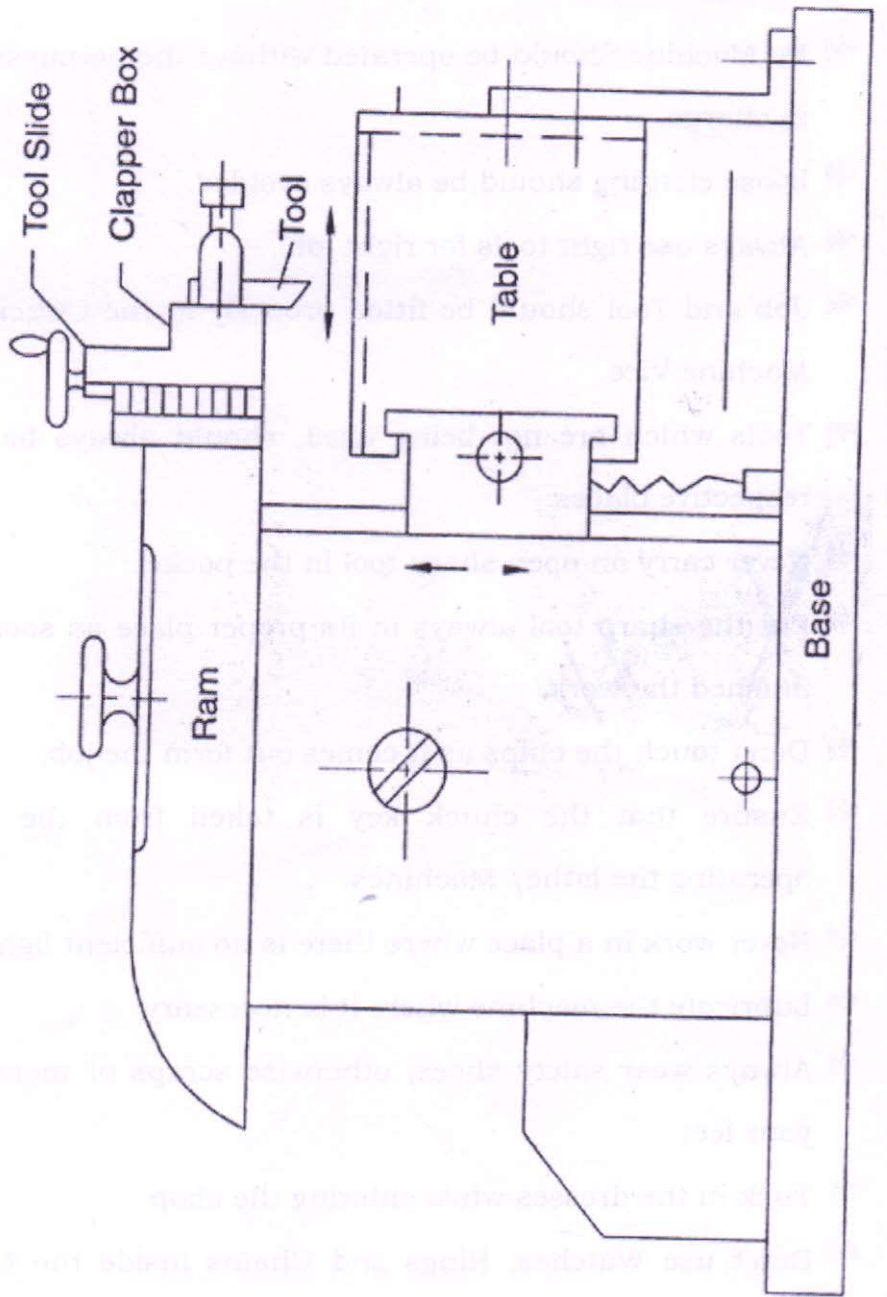
Year : III Year                      Sec : \_\_\_\_\_

Semester : VI



## Safety Precautions in Machine Shop

- ☛ The Shop floor must be kept clean and free from Debris, Scraps, Oil and Grease.
- ☛ No Machine Should be operated without the permission of the Staff in charge.
- ☛ Loose clothing should be always avoided.
- ☛ Always use right tools for right job.
- ☛ Job and Tool should be fitted properly in the Chuck/ Tool Post / Machine Vice.
- ☛ Tools which are not being used, should always be kept at their respective places.
- ☛ Never carry an open sharp tool in the pocket
- ☛ Put the sharp tool always in its proper place as soon as you have finished the work.
- ☛ Don't touch the chips as it comes out form the job.
- ☛ Ensure that the chuck key is taken from the chuck before operating the lathe/ Machines.
- ☛ Never work in a place where there is no sufficient light.
- ☛ Lubricate the machine where it is necessary
- ☛ Always wear safety shoes, otherwise scraps or metal parts injure your feet.
- ☛ Tuck in the dresses while entering the shop
- ☛ Don't use Watches, Rings and Chains inside the Machine shop, while coming in Remove all the things from your body.
- ☛ Avoid loose talking inside the machine shop, to concentrate at your work.



**SHAPING MACHINE (SHAPER)**

## STUDY OF SHAPING MACHINE

### Shaper

Shaper is a reciprocating machine tool. The tool is held in the tool holder and mounted on the ram, which moves forward and backward in a straight line over the work piece rigidly held in a vice clamped over the work table. Each time the tool moves forward, it cuts the metal. The work remains stationary during the forward stroke of the tool but moves across by one cross traverse every time during the return stroke. The machined surface appears like close straight line cuts.

### Construction

The plain shaper has a ram that reciprocates horizontally. To begin cutting the tool is pushed against the job. So it is called push type shaper. In a standard shaper, the work table has only vertical and horizontal movements. The work table may not have a vertical support. This is a horizontal type shaper.

### Parts of a shaper

A standard shaper has the following main parts.

**Base:** The base of the shaper supports the column or pillar, which supports all the working parts such as ram, worktable, drive mechanism, etc. base is a heavy cast iron body.

**Column pillar or Body:** The shaper has a column, which is a ribbed casting of cellular construction. The top of the column carries the ram slide ways; whilst the tables slide ways are machined on the front of the casting. The crank and the slotted link mechanism that drives the ram is contained within the column. The driving motor, variable speed gearbox, levers, handles and other controls of shaper are contained in the column.

**Cross - Rail:** The cross rail carries the horizontal table slide ways and is mounted on the vertical slide ways of the column. The cross rail can be raised or lowered by means of an elevating screw for different thickness

